**VX1 Geiger counter** and **Logger** (Page 1 of 2)

User Guide (Firmware V1.0)

Overview

The VX1 is a handheld Geiger counter powered by and internal 9v PP3 battery or an external 9-12v power supply plugged into a socket on the side. The VX1 contains a ZP1401 Geiger tube with a mica window that can detect alpha beta and gamma particles. The unit contains an accurate real time clock that has battery backup. It can log data for up to 15 days in internal non-volatile memory.

A USB port is fitted to allow connection a PC to enable logging real time or to dump the internal log memory

Operation

The VX1 is turned on by a 3 position slide switch on the side. The centre position is off. Moving towards the display turns the unit on with the internal battery and moving towards the rear turns the unit on with an external power supply if connected. When first turned on the VX1 will display briefly “Geiger VX1\*\* V1.0 Press \* for menus” then change to the normal idle display showing the current date and time on the top line and the current count per minute on the bottom line.

Typical display will be: - “10/02/16 10:32 S”

“CPM 000022 L”

The S icon indicates that the sounder is active and the L that the led above the display is also active. The sounder and led operate every time a particle triggers the Geiger tube. The sounder can be turned on or off by pressing the A on the keyboard and the led by pressing the B. CPM indicates counts per minute followed by the count which is 6 digits. The Geiger tube fitted can count over 300,000 counts per minute.

POWER

On internal battery PP3 with a fresh battery, for example Duracell MN1604, the VX1 should run for around 30 hours in logging mode with the sounder and led turned off and background radiation of around 25 CPM. External power should be 9-12v (13.8 Max) supplied by a 5.5mm x 2.1mm connector centre pin positive.

Current consumption is around 20mA

Menus

Setup menus can be accessed in sequence by pressing the \* key. The sequence is “Main Menu”>“Set Date / Time”>“Display CPM”>“Display mR/Hour”>“Generate Random Nos?”>“Log Functions”.

Detailed description of each menu follows below:-

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“Set Date / Time?”

“# OK \* Next “. Press # key to set the date then press # again to set the time.

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“Display CPM “

“# OK \* Next “. Press # to display in Counts per minute.

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“Display mR/Hour”

“# OK \* Next “. Press # to display dose rate mR per hour.

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“Generate Random”. Press # for next menu. “1. Lotto 2. EuroMi”. Press 1 for Lotto numbers and 2

“Nos? # OK \* Next “. “\* Next “. for Euro Millions.

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“Log Functions “. Press # for log menu. “1-Start 2-Stop”

“# OK \* Next “ “3-View \*Next”. Press 1 to start logging data to internal memory. The starting time and date will be saved and LOG will be displayed in the Main Menu.

Logging will continue until either the memory is full which will take 15 days or log stop is selected.

To run for 15 days may require an external power supply. Select view to display the log on the LCD display which will show one record at a time pressing # for the next.

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From the log menu press \* to enter the dump log menu “Dump to USB “

“# OK \* Next “

If the USB port is connected to a PC then the log data will be transferred until the end of the log.

Freeware for the PC is available from <http://rhelectronics.net>. Data is output at 9600baud 8 data bits no parity and one stop bit.

**Warning: *The Geiger tube mica window can be seen through a hole in the side of the unit to allow for maximum sensitivity it is delicate and should not be poked through the hole or damage to the tube will occur.***